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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,783	11/14/2001	Steven Gray	9D-HR-19209	8847

7590 07/01/2003
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EXAMINER

RO, BENTSU

ART UNIT PAPER NUMBER

2837

DATE MAILED: 07/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,783

Applicant(s)

GRAY ET AL.

Examiner

Bentsu Ro

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-26 and 30-49 is/are allowed.
- 6) ☒ Claim(s) 1,2,27,28,50 and 51 is/are rejected.
- 7) ☒ Claim(s) 3-6,29 and 52 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 21 May 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

SECOND OFFICE ACTION ----- A FINAL REJECTION

1. Claims 1, 2, 27, 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Van Landingham US Patent No. 4,300,081.

Claims read onto Van Landingham patent as follows:

The claims:

1. (Once amended) A method for controlling speed in a pulse-width-modulation controlled motor powered by a load voltage source, said method comprising the steps of:

measuring the motor load voltage; and

setting pulse-width-modulation duty cycles based on the measured voltage,

wherein an average of frequencies of the pulse-width modulation duty cycles is a predetermined average pulse-width modulation frequency of the motor.

Van Landingham teaching:

Van Landingham Fig. 1 teaches a method and an apparatus for controlling a motor speed with a pulse width modulation (PWM); column 1, line 15 states "In a pulse-width-modulated system"; Fig. 2 shows the waveforms of PWM; Fig. 1 shows a storage battery 24, which is a load voltage source;

Fig. 1 shows a servo motor voltage averaging circuit 58, this circuit measures the motor load voltage at motor terminals 34 and 35;

the output of the averaging circuit 58 summed with the output of a signal generator 64 at a terminal 62 to set PWM duty cycle;

this limitation has no functionality at all, this limitation simply states the fact of all pulse-width modulation control because the average frequencies of the pulse-width modulation duty cycles is the same as the average pulse-width modulation frequency of the motor, namely, the motor is controlled by the average frequency of the pwm duty cycles, therefore, the motor's pwm frequency must follow the average frequency of the pwm duty cycles.

2. A method in accordance with claim 1 wherein said steps are sequentially executed and repeated automatically while the motor is in an on state.

All circuits are sequentially executed because the output must always respond to the input; the circuit operations are also repeated automatically because each input change immediately causes the output to change; further, this is a servo system, the servo system requires the output response to any change in the input immediately.

27. (Once amended) A motor comprising:
.....

Same as that of claim 1; albeit not clearly shown, the elements "a housing", "a stator" and "a rotor" are all in the dc servomotor 10.

28. (Once amended) A motor in accordance with claim 27 wherein said processor further configured to diagnose motor functionality.

The motor speed or motor voltage measured at the motor terminals 34, 35, represents the functionality of the motor; the averaging circuit 58 measures the motor terminal voltage, thus, the averaging circuit 58 is configured to diagnose the motor functionality; the output of the averaging circuit 58 represents the result of the diagnosis.

2. Claims 1, 2, 27, 28 are all rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sakoh US Patent No. 5,268,987.

Sakoh Fig. 9 (prior art) shows a voltage V1 which is a "motor load voltage"; a dc power source A which is a "load voltage source"; a voltage V4 which is an "average PWM frequency" (a frequency in terms of a voltage).

The reasons of the rejection are basically the same as that of paragraph 1 above, no further discussion is needed.

3. Claims 50, 51 are all rejected under 35 U.S.C. 103(a) as being unpatentable over Sakoh.

The refrigerator having a housing, a freezer section, a fresh food section, a motor, a processor connected to the motor for controlling the motor. These are all well known art.

With respect to these claims, Sakoh's motor obviously can be used to control a refrigerator.

The reasons of rejection is same as that of paragraph 1 above, no further discussion is needed.

The examiner must repeat again that, in the amendment if applicant argues the patentability based on a refrigerator, then the examiner will impose a restriction to exclude these claims from the prosecution because these claims are restrictable.

4. Claims 27 and 28 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mourad et al US Patent 6,236,175 B1.

Regarding to these claims, the load voltage reads onto the back emf or V_0 and the functionality reads onto the motor speed. The rejection for the "average frequency" is the same as that of paragraph 1 above.

5. Claims 1, 2, 27, 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Kubozuka et al US Patent No. 6,509,709 B2.

The motor load voltage is measured at terminal "a" (see the sole figure), and the motor speed is controlled by PWM at block 3.

The reasons for rejecting the average frequency is the same as described in paragraph 1 above.

6. Claims 7-26, 30-49 are allowable.

7. Claims 3-6, 29, 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Applicant's arguments with respect to all claims have been fully considered. With these arguments, the examiner has decided to allow all claims except claims 1, 2, 27, 28, 50 and 51.

The examiner has decided to allow all independent claims with the limitation of "sweep frequency" similar to that of amended claim 7. Applicant should note that claim 17 was rejected

previously in the first office action, but now claim 17 is allowable even though claim 17 has not been amended.

With respect to claims 1, 2, 27, 28, 50 and 51, the limitation "average frequency" is merely a statement of fact, this statement has no functionality and has no limitation to the scope of the claims. Therefore, these claims remain rejected by the same references cited in the first office action.

9 Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 703 308-3656.

June 27, 2003


Bentsu Ro
Primary Examiner